AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A system for implementing surgical procedures comprising:

an ultrasonic surgical hand piece; ~~having~~

an end-effector with a sheath, said end-effector being connectable to said hand piece, and said ~~wherein the~~ end-effector ~~is~~ being selected from the group consisting of a blade, shears, scissors and forceps;

a generator console for controlling the hand piece, wherein the console sends a drive current to drive the hand piece, which drive current imparts ultrasonic longitudinal movement to the end-effector; and

a memory disposed in the sheath of the end-effector which adjusts operation of the generator console for operation with the end effector to set a cutting rate and degree of tissue hemostasis with the end effector, wherein the console reads information stored in the memory to determine whether a copyrighted data string is present;

wherein the hand piece is authenticated for use with the console if the data string is present.

2. (Currently Amended) A system for implementing surgical procedures comprising:

an ultrasonic surgical handpiece; ~~having~~

an end-effector connectable to said hand piece,

a generator console for controlling the hand piece wherein the console sends a drive current to drive the hand piece, which drive current imparts ultrasonic longitudinal movement to the end-effector; and

a memory disposed in a portion of the end-effector selected from the group consisting of a grip, handle and mounting, said memory periodically adjusting operation of the generator console ~~for operation with~~ during the operation of the end-effector to set a cutting rate and degree of tissue hemostasis with the end-effector,

wherein the console reads information stored in the memory to determine whether a data string is present; and

wherein the handpiece is authenticated for use with the console if the data string is present.

3. (Currently Amened) A system for implementing surgical procedures comprising:

an ultrasonic surgical handpiece; ~~having~~

an end-effector connectable to said handpiece;

a generator console for controlling the handpiece, wherein the console sends a drive current to drive the handpiece, which drive current imparts ultrasonic longitudinal movement to the end-effector; and

a memory disposed within a sheath of the end-effector which adjusts operation of the generator console for operation with the end effector to set a cutting rate and degree of tissue hemostasis with the end-effector,

wherein the console reads information stored in the memory to determine whether a data string is present, wherein the handpiece is authenticated for use with the console if the data string is present.

4. (Original) The system of claim 2 wherein the data string is copyrighted.

5. (Original) The system of claim 3 wherein the data string is copyrighted.

6. (Currently Amended) The system of claim 2 wherein the memory stores an alarm limit and a disable limit, wherein the console instructs the hand piece to operate in an alarm mode if a temperature of the hand piece exceeds the alarm limit, and the console disables the hand piece if the temperature of the hand piece exceeds the disable limit.

7. (Currently Amended) The system of claim 3 wherein the memory stores an alarm limit and a disable limit, wherein the console instructs the hand piece to operate in an alarm mode if a temperature of the hand piece exceeds the alarm limit, and the console disables the hand piece if the temperature of the hand piece exceeds the disable limit.

8. (Currently Amended) The system of claim 1 wherein the memory stores an alarm limit and a disable limit, wherein the console instructs the hand piece to operate in an alarm mode if a temperature of the hand piece exceeds the alarm limit, and the console disables the hand piece if the temperature of the hand piece exceeds the disable limit.

9. (Currently Amended) A system for implementing surgical procedures comprising:

an ultrasonic surgical handpiece; ~~having~~

a detachable end-effector connectable to said handpiece;

a generator console for controlling the handpiece, wherein the console sends a drive current to drive the handpiece, which drive current imparts ultrasonic longitudinal movement to the end-effector; and

a memory disposed within the end-effector, which adjusts operation of the generator console for operation with the end-effector to set a cutting rate and degree of tissue hemostasis with the end-effector wherein the console writes historical usage and diagnostic information and configuration information into the memory;

wherein the diagnostic information are selected from the group consisting of number of activations, duration of activations, number of uses with substantial time between use, diagnostic error codes, enable use, disable use, serial number of the generator console, and serial number of the handpiece.

10. (Currently Amended) A system for implementing surgical procedures comprising:

an ultrasonic surgical handpiece; ~~having~~

a detachable end-effector connectable to said handpiece and selected from the group consisting of a blade and shears;

a generator console having a digital signal processor (DSP) for controlling the handpiece, wherein the console sends a drive current to drive the handpiece, which drive current imparts ultrasonic longitudinal movement to the end-effector; and

a memory disposed in the end-effector which adjusts operation of the generator console for operation with the end-effector to set a cutting rate and degree of tissue hemostasis with the end-effector,

wherein the console reads the memory and determines if the end-effector has been disabled for disabling the console from driving the end-effector.

11. (Original) The system of claim 10 wherein the handpiece further comprises an alarm which sounds to notify a potentially compromised state.

12. (Currently Amended) A system for implementing surgical procedures comprising:

an ultrasonic surgical handpiece; ~~having~~

an end-effector connectable to said handpiece and selected from the group consisting of a blade and shears;

a generator console having a digital signal processor for controlling the handpiece, wherein the console sends a drive current to drive the handpiece, which drive current imparts ultrasonic longitudinal movement to the end-effector; and

a memory disposed within the end-effector which adjusts operation of the generator console for operation with the end-effector to set a cutting rate and degree of tissue hemostasis with the end-effector,

wherein the console reads information stored in the memory and displays the information and an interpretation of the information on the console display.

13. (Currently Amended) The system of claim 12 further comprising a switch adaptor wherein the memory communicates electrically with the switch adaptor through direct contacts; and

wherein the switch adaptor conveys the information to the handpiece

14. (Currently Amended) The system of claim 12 further compromising an adaptor wherein the memory communicates electrically with the adaptor through electromagnetic signal coupling; and

wherein the adaptor conveys the information via the electromagnetic signal coupling to the handpiece.

15. (Currently Amended) The system of claim 12 further comprising a switch adaptor wherein the memory communicates electrically with the handpiece through electromagnetic signal coupling; and

wherein the switch adaptor conveys the information via the electromagnetic signal coupling to the handpiece.

16. (Original) The system of claim 12 further comprising a switch adaptor wherein the adaptor electrically communicates with the handpiece through direct contacts.

17. (Previously Presented) The system of claim 12 wherein the memory is used in conjunction with specialized instruments selected from the group consisting of artery devices, homogenizers and liquifiers.

18. (Original) The system of claim 12 wherein the memory is used to determine compatibility with specific types of the handpiece and to block use of the handpiece if incompatibility with the handpiece is determined.

19. (Original) The system of claim 1 wherein the hand piece is authenticated for use with the console using cyclical redundancy check (CRC) implemented in a firmware programmed in the memory.

20. (Currently Amended) The system of claim 1 wherein the data string is an encrypted code, and the hand piece is authenticated for use with the console by decoding the encrypted code with a corresponding encryption algorithm in the console and providing a responding data pattern.

21. (Currently Amended) The system of claim 1 wherein the memory stores a handicap limit and a disable limit, wherein the console instructs the hand piece to operate in a handicap mode if a temperature of the hand piece exceeds the handicap limit, and the console disables the hand piece if the temperature of the hand piece exceeds the disable limit.

22. (Original) The system of claim 1 wherein the memory stores a handicap limit and a disable limit, wherein the console instructs the hand piece to operate in a handicap mode if a number of defective blades found in a time period of operating the hand piece exceeds the handicap limit, and the console disables the hand piece if the number of defective blades found in the time period exceeds the disable limit.

23. (Currently Amended) The system of claim 1 wherein the memory stores a handicap limit and a disable limit, wherein the console instructs the hand piece to operate in a handicap mode if a

time during which the hand piece has been active exceeds the handicap limit, and the console disables the hand piece if the time during which the hand piece has been active exceeds the disable limit.

24. (Currently Amended) The system of claim 1 wherein the memory stores a handicap limit and a disable limit, wherein the console instructs the hand piece to operate in a handicap mode if a number of activations for the hand piece within a time period exceeds the handicap limit, and the console disables the hand piece if the number of activations for the hand piece within the time period exceeds the disable limit.

25. (Original) The system of claim 21 wherein the handicap limit and the disable limit are re-initialized based on varied operational conditions of the hand piece.

26. (Original) The system of claim 1 wherein the console is reprogrammed by reading a reprogram code stored in the memory if it is determined that a reprogram of the console is needed, and the console is upgraded by reading an upgrade code stored in the memory if it is determined that an upgrade of the console is needed.

27. (Original) The system of claim 26 wherein the console reads the reprogram code and the upgrade code from a non-volatile memory of a non-hand piece device which is plugged into the hand piece in substitution of the end-effector.

28. (Original) The system of claim 1 wherein the information stored in the memory correlates energy level information and corresponding output displacement, wherein the console reads the energy level information and drives the hand piece according to the corresponding output displacement.

29. (Currently Amended) The system of claim 1 wherein the information stored in the memory includes a nominal resonant frequency, a start sweep point and a stop sweep point delimiting a frequency range, wherein a frequency sweep in effect under control of the console is in the frequency range for detecting a resonant frequency for operating the hand piece.

30. (Currently Amended) The system of claim 1 wherein the information stored in the memory includes a nominal resonant frequency, a bias amount and a margin amount from which a frequency range is calculated, wherein a frequency sweep in effect under control of the console is in the frequency range for detecting a resonant frequency for operating the hand piece.

31. (Original) The system of claim 1 wherein the memory consists of an Electrically Erasable Programmable Read Only Memory (EEPROM), Read Only Memory (ROM), Erasable Programmable Read Only Memory (EPROM), Random Access Memory (RAM), Programmable Array Logic (PAL), Programmable Logic Array (PLA), analog serial storage device, sound storage integrated circuit, a memory device in conjunction with a numeric manipulation device including a microprocessor for the purpose of encryption, volatile memory which is powered by a device consisting of a cell, battery and capacitor.

32. (Currently Amended) A method for implementing surgical procedures in a system including an ultrasonic surgical hand piece ~~having~~ connectable to an end-effector with a sheath, a console for controlling the hand piece, and a memory disposed in the sheath of the end-effector which adjusts operation of the generator console for operation with the end-effector to set a cutting rate and degree of hemostasis with the end-effector, the method comprising the steps of:

reading information stored in the memory;

determining whether a copyrighted data string is present in the memory;

authenticating use of the hand piece with the console if the data string is present;

sending a drive current to drive the hand piece; ~~and~~

imparting ultrasonic movement to the ~~blade~~ end-effector; and

periodically querying the memory during the ultrasonic movement of the end-effector to adjust operation of the console.

33. (Currently Amended) The method of claim 32, wherein the data string is an encrypted code and wherein the step of authenticating use of the hand piece ~~further comprising~~ comprises the steps of:

decoding the encrypted code with an encryption algorithm in the console; and

providing a responding data pattern that can be authenticated;

~~wherein the data string is an encrypted code~~.

34. (Currently Amended) The method of claim 32 further comprising the steps of:

instructing the hand piece to operate in a handicap mode if a temperature of the hand piece exceeds a handicap limit; and

disabling the hand piece if the temperature of the hand piece exceeds a disable limit.

35. (Currently Amended) The method of claim 32 further comprising the steps of:

instructing the hand piece to operate in a handicap mode if a number of defective blades found in a time period of operating the hand piece exceeds a handicap limit; and

disabling the hand piece if the number of defective blades found in the time period exceeds a disable limit.

36. (Currently Amended) The method of claim 32 further comprising the steps of:

instructing the hand piece to operate in a handicap mode if a time the hand piece has been active exceeds a handicap limit; and

disabling the hand piece if the number of defective blades found in the time the hand piece has been active exceeds a disable limit.

37. (Currently Amended) The method of claim 32 further comprising the steps of:

instructing the hand piece to operate in a handicap mode if a number of activations for the hand piece within a time period exceeds a handicap limit; and

disabling the hand piece if the number of activations for the hand piece within the time period exceeds a disable limit.

38. (Original) The method of claim 34 further comprising the step of re-initializing the handicap limit and the disable limit based on varied operational conditions of the hand piece.

39. (Original) The method of claim 32 further comprising the steps of:

determining whether a reprogram of the console is needed;

reading a reprogram code stored in the memory and reprogramming the console using the reprogram code, if it is determined that a reprogram of the console is needed;

determining whether an upgrade of the console is needed; and

reading an upgrade code stored in the memory and upgrading the console using the upgrade code, if it is determined that an upgrade of the console is needed.

40. (Original) The method of claim 32 further comprising the steps of:

reading energy level information stored in the memory; and

driving the hand piece according to a corresponding output displacement;

wherein the energy level information stored in the memory is correlated with corresponding output displacement for driving the hand piece.

41. (Original) The method of claim 32 further comprising the steps of:

reading a nominal resonant frequency, a start sweep point and a stop sweep point delimiting a frequency range from the memory;

effecting a frequency sweep in the frequency range; and

detecting a resonant frequency for operating the hand piece.

42. (Original) The method of claim 32 further comprising the steps of:

reading a nominal resonant frequency, a bias amount and a margin amount from the memory;

calculating a frequency range based on the nominal resonant frequency, the bias amount and the margin amount;

effecting a frequency sweep in the frequency range; and

detecting a resonant frequency for operating the hand piece.

43. (Currently Amended) The method of claim 32 further comprising the steps of:

keeping track of a number of uses ~~for~~ of the end-effector; and

keeping track of a number of remaining uses allowed for the end-effector.

44. (Currently Amended) A system for implementing surgical procedures comprising:

an ultrasonic surgical handpiece~~;~~ ~~having~~

an end-effector connectable to said handpiece;

a generator console for controlling the handpiece, wherein the console sends a drive current to drive the handpiece, which drive current imparts ultrasonic longitudinal movement to the end-effector; and

a memory disposed with a sheath of the end-effector which adjusts operation of the generator console for operation with the end-effector to set a cutting rate and degree of tissue hemostasis with the end-effector,

wherein the console reads information stored in the memory to determine whether a data string is present, wherein the end-effector is authenticated for use with the handpiece if the data string is present.

45. (Original) The system of claim 44 wherein the data string is copyrighted.

46. (Currently Amended) The system of claim 44 wherein the memory stores an alarm limit and a disable limit, wherein the console instructs the hand piece to operate in an alarm mode if a temperature of the hand piece exceeds the alarm limit, and the console disables the hand piece if the temperature of the hand piece exceeds the disable limit.

47. (Canceled)